

NASA Contractor Report 4204

**Publications of the
Biospheric Research
Program: 1981-1987**

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Biospheric Research
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INTRODUCTION

The Biospheric Research Program of the Life Sciences Division, located within the Office of Space Science and Applications of the National Aeronautics and Space Administration, was established in 1982 as a result of deliberations of the Global Biology Science Working Group. This group of leading scientists was brought together as a result of a series of workshops convened by NASA's Life Sciences Division in 1979, 1980, and 1981 that focused on the manner in which biological processes influence geochemical and atmospheric cycles. Addressing the complexity of this subject matter, the Global Biology Science Working Group developed a research strategy, based on the workshop recommendations, to prescribe activities to create an understanding of the biospheric dynamics involved in the interaction between the biota and the environment.

This research strategy led to the formation of NASA's Global Biology Program, which was renamed the Biospheric Research Program in 1984. This program presently focuses on our planet as an "integrated biogeochemical system of air, water, land, and life." It examines the manner in which these components interact. The program's main goal is to define the role of the biosphere in the physical and chemical systems on Earth.

The Biospheric Research Program, whose specific research thrusts have evolved during the last six years, is currently divided into five subject areas: (a) Wetlands Research (presently focused along the eastern United States); (b) Temperate Forest Research (presently concentrated at Sequoia National Park); (c) Tropical Forest Research (presently represented as the Amazon Ground Experiment); (d) Global Monitoring and Disease Prediction (presently focused on malaria); and (e) Global Studies. Also located under the auspices of the Biospheric Research Program is the Planetary Biology and Microbial Ecology Program. This student summer program, which is held approximately every other year, brings together internationally known investigators, graduate students, and postdoctoral fellows for intensive research into microbial communities thought to have "pre-Phanerozoic" analogues.

Research supported by the Biospheric Research Program is documented in this bibliography. Articles are listed alphabetically and are categorized by year from 1981 to 1987. Our intent in compiling this bibliography is twofold. First, we would like to provide the scientific community with a list of publications resulting from research pursued under the auspices of NASA's Biospheric Research Program. Second, we hope to stimulate an

exchange of information and ideas among scientists working in different areas of the program. To facilitate the exchange process, we have identified for each publication, by asterisk, the participants in the program. Current addresses and an index of papers for all Biospheric Research program participants are located on page 39. A list of publications relevant to the development of the program is located on page 5.

We wish to thank all participants for their publication lists. We would also like to thank Janice Susan Wallace for her editorial and technical expertise in compiling this bibliography.

Mel Averner, Ph.D.
Biospheric Research Program Manager

PUBLICATIONS OF THE BIOSPHERIC RESEARCH PROGRAM:
1981-1987

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